



INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
भारतीय प्रौद्योगिकी संस्थान तिरुपति
Yerpedu-Venkatagiri Road, Yerpedu Post, Tirupati District, Andhra Pradesh - 517 619

1.	Title of the course	Foundations of Engineering Mechanics
2.	Course number	ES105L
3.	Structure of credits (L-T-P-C)	2-1-0-3
4.	New course/modification to	Modified with AM1100/ENGINEERING MECHANICS
5.	To be offered by	Civil and Environmental Engineering
6.	Prerequisite	None
7.	Course Objective(s): To impart knowledge on the analysis of rigid structures subjected to static loads and to provide fundamentals of Kinematics and Kinetics.	
8.	Course Content: Fundamentals of mechanics - force, moment, resultants, Equilibrium of two-dimensional and three-dimensional systems - free body diagrams, Center of gravity and moment of inertia, Analysis of structures such as trusses, frames, and machines - equilibrium method and principle of virtual work, Friction, Kinematics of particle - rectilinear motion of particles, plane curvilinear motion, relative motion, Kinetics of a particle - work and energy.	
9.	Textbook(s): 1. Beer F P, Johnston E R, Mazurek D F, Cornwell P J and Self B, Vector Mechanics for Engineers: Statics and Dynamics, 12th Edition, McGraw-Hill, New York (2017) 2. Meriam J L and Kraige L G, Engineering Mechanics, Volume I - Statics, Volume II - Dynamics, John Wiley and Sons, New York (2012).	
10.	Reference(s): 1. Shames I H and Rao K M, Engineering Mechanics: Statics and Dynamics, 4th Edition, Pearson, New Delhi (2005).	